

**NONREIMBURSABLE SPACE ACT AGREEMENT  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
AMES RESEARCH CENTER  
AND  
AMERICAN AIRLINES, INC.  
FOR  
HUMAN FACTORS FATIGUE RESEARCH**

**ARTICLE 1. AUTHORITY AND PARTIES**

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)), this Non-Reimbursable Space Act Agreement (this "Agreement") is made and entered into between the National Aeronautics and Space Administration Ames Research Center, located at Moffett Field, CA 94035 (hereinafter referred to as "NASA" or "NASA ARC") and American Airlines, Inc., located at 1 Skyview Dr. MD8B101, Fort Worth, TX 76155-2123 (hereinafter referred to as "Partner"). NASA and Partner may be individually referred to as a "Party" and collectively referred to as the "Parties."

**ARTICLE 2. PURPOSE**

The Parties propose to enter into an Agreement that would emphasize each Party's commitment to improve aviation safety by proactively identifying and resolving pilot fatigue issues in aviation through analysis of data on flight crew performance.

**ARTICLE 3. RESPONSIBILITIES**

A. NASA ARC will use reasonable efforts to:

1. Assist Partner by conducting analyses of Data (as defined herein) to study the causes of flight crew performance decrements and causal factors of flight crew fatigue in aviation operations, including, but not limited to, interpreting the results of the foregoing analyses and comparing the results to those of previous experiments, as applicable (the "Part 117 Analyses");
2. Assist Partner by jointly reviewing and commenting on the methodologies used in the Part 117 Analyses for analyzing human performance data and narrative reports and their value to understanding the consequences and causal factors of flight-crew fatigue in aviation operations; provided, however, Partner is solely responsible for preparing and submitting to the Federal Aviation Administration ("FAA"), all reports which may contain analyses used in addressing Part 117 requirements as well as other analyses produced by NASA;
3. Conduct analysis of Data for NASA ARC's own purposes related to measurement tool development (the "Measurement Tool Development Analyses");

4. Publish a peer reviewed report or reports in journals, conferences or such other venues in accordance with the publication review process set forth in Article 9(E);

5. Collaborate with Partner in the development and validation of human performance metrics;

6. Develop tools and methodologies for analyses of demographic data for the causes of flight crew performance decrements and causal factors of flight crew fatigue in aviation operations; and

7. Produce a review of potential areas of future study.

B. Partner will use reasonable efforts to:

1. Provide NASA ARC access to sets of de-identified human performance Data for purposes of the Part 117 Analyses and the Measurement Tool Development Analyses, as applicable;

2. Participate in the Part 117 Analyses and the Measurement Tool Development Analyses, as applicable;

3. Assign experts to assist in the Part 117 Analyses and the Measurement Tool Development Analyses, as applicable, to provide a reliable, objective indicator of mode confusion and to serve as a metric of flight crew fatigue by correlation with other indicators of fatigue that may be derived from other related Data provided by Partner;

4. Assign domain experts within Partner's Fatigue Risk Management system teams to identify and define, with NASA ARC, the contributing factors of human performance appropriate to Partner's operations using the Master List of Contributing Factors that were developed in the U.S. for the Distributed National ASAP Archive (DNAA);

5. Collaborate with NASA ARC in the development and validation of human performance metrics;

6. Prepare and submit all reports addressing Part 117 requirements to the FAA;

7. Prepare and publish, in accordance with the publication review process, one or more reports or technical articles, as set forth in Article 9(E);

8. Produce a review of potential areas of future study;

9. Provide office space to house visiting NASA ARC human factors team members; and

10. Provide NASA ARC human factors team members with non-revenue space-positive travel on American Airlines or other airlines operated by Partner or its affiliates arranged

by Partner, solely in conjunction with work performed on designated flights under this Agreement in taking data collection and quality control measurements of flight Data. Such flights will be pre-approved by Partner, subject to the then-current travel policies of Partner or its affiliates, as applicable.

#### ARTICLE 4. SCHEDULE AND MILESTONES

A. Unless otherwise agreed between the Parties, the planned major milestones for the activities defined in the “Responsibilities” Article shall include the following:

1. NASA ARC and Partner jointly identify a specific topic of study to further the purpose of this Agreement;
2. Each Party identifies the proposed measurement parameters, equipment needed and tests to be performed as part of pilot fatigue studies;
3. The Parties initiate pilot fatigue studies;
4. Partner provides de-identified archived human performance Data sets to NASA ARC for analysis by NASA ARC;
5. The Parties, either jointly or separately, prepare a written report on results of pilot fatigue and performance, in accordance with the publication review process as set forth in Article 9(E);
6. The Parties jointly identify at least one question for further study;
7. In accordance with subarticle A.2 and subarticle B.6 of Article 3, Partner prepares and submits its reports addressing Part 117 requirements to the FAA, as applicable; and
8. NASA ARC and Partner may prepare and publish one or more reports and technical articles, in NASA publications, journals, and conferences, in accordance with the publication review process as set forth in Article 9(E).

B. The schedule for the completion of the milestones for questions of further study set forth in subarticle A of this Article 4 shall be mutually agreed between the Parties on a study-by-study basis.

#### ARTICLE 5. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. All activities under or pursuant to this Agreement

are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

#### ARTICLE 6. PRIORITY OF USE

Any schedule or milestone in this Agreement is estimated based upon the Parties' current understanding of the projected availability of NASA goods, services, facilities, or equipment. In the event that NASA's or Partner's projected availability changes, Partner or NASA, as the case may be, shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Agreement. Should a conflict arise, NASA, in its sole discretion, shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA partners, NASA, in its sole discretion, shall determine the priority as between those partners. This Agreement does not obligate NASA to seek alternative government property or services under the jurisdiction of NASA at other locations.

#### ARTICLE 7. NONEXCLUSIVITY

This Agreement is not exclusive; accordingly, either Party may enter into similar agreements for the same or similar purpose with other private or public entities.

#### ARTICLE 8. LIABILITY AND RISK OF LOSS

A. Each Party hereby waives any claim against the other Party, employees of the other Party, the other Party's Related Entities (including but not limited to contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors or subcontractor at any tier), or employees of the other Party's Related Entities for any injury to, or death of, the waiving Party's employees or the employees of its Related Entities, or for damage to, or loss of, the waiving Party's property or the property of its Related Entities arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.

B. Each Party further agrees to extend this cross-waiver to its Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Party, Related Entities of the other Party, and employees of the other Party or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement. Additionally, each Party shall require that their Related Entities extend this cross-waiver to their Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Party, Related Entities of the other Party, and employees of the other Party or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement.

## ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

### A. General

1. "Related Entity" as used in this Article 9 means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner that is assigned, tasked, or contracted to perform activities under this Agreement.
2. "Data" means recorded information, regardless of form, the media on which it is recorded, or the method of recording.
3. "Proprietary Data" means Data embodying trade secrets developed at private expense or commercial or financial information that is privileged or confidential, and that includes a restrictive notice, unless the Data:
  - a. at the time of the disclosure to the Receiving Party is publicly available or thereafter becomes so available through no act or omission of the Receiving Party;
  - b. is disclosed to the Receiving Party by a third party that did not acquire the information under an obligation of confidentiality known to Receiving Party;
  - c. can be shown by credible evidence to have already been in the possession of the Receiving Party at the time of the communication to the Receiving Party or to have been independently developed by the Receiving Party; or
  - d. is disclosed or used as required by court order or as otherwise required by applicable law, on the condition that notice of the requirement for such disclosure is given to the Disclosing Party prior to making such disclosure or use.
4. Data exchanged under this Agreement is exchanged without restriction except as otherwise provided herein.
5. Notwithstanding any restrictions provided in this Article 9, the Parties are not restricted in the use, disclosure, or reproduction of Data provided under this Agreement that meets one of the exceptions to Proprietary Data. If a Party believes that any exceptions apply, it shall notify the other Party before any unrestricted use, disclosure, or reproduction of such Data.
6. The Parties will not exchange preexisting Proprietary Data under this Agreement unless authorized herein or in writing by the owner thereof.
7. If the Parties exchange Data having a notice that the Receiving Party deems is ambiguous or unauthorized, the Receiving Party shall notify the Disclosing Party. If the notice indicates a restriction, the Receiving Party shall protect the Data under this Article 9 unless otherwise directed in writing by the Disclosing Party.

8. The Data rights herein apply to the employees and Related Entities of Partner. Partner shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article 9.

9. Disclaimer of Liability: NASA is not restricted in, or liable for, the use, disclosure, or reproduction of Data without a restrictive notice, or for Data that Partner gives, or is required to give, to the U.S. Government without restriction.

10. Partner may use the following or a similar restrictive notice:

**Proprietary Data Notice**

The data herein include Proprietary Data and are restricted under the Data Rights provisions of Space Act Agreement SAA2-403621

Partner should also mark each page containing Proprietary Data with the following or a similar legend: "**Proprietary Data – Use And Disclose Only Under the Notice on the Title or Cover Page.**"

**B. Data First Produced by Partner Under this Agreement**

If Data first produced by Partner or its Related Entities under this Agreement is given to NASA, and the Data is Proprietary Data, and it includes a restrictive notice, NASA will use reasonable efforts to protect it in accordance with subarticle I of this Article 9. The Data will be disclosed and used (under suitable protective conditions) only for U.S. Government purposes.

**C. Data First Produced by NASA Under this Agreement**

1. If Partner requests that Data first produced by NASA under this Agreement be protected, and NASA determines it would be Proprietary Data if obtained from Partner, NASA will mark it with a restrictive notice and use reasonable efforts to protect it for three years after its development. During this restricted period the Data may be disclosed and used (under suitable protective conditions) for U.S. Government purposes only, and thereafter for any purpose (subject to the limitations set forth in paragraph C.2.). Partner must not disclose the Data without NASA's written approval during the restricted period. The restrictions placed on NASA do not apply to Data disclosing a NASA owned invention for which patent protection is being considered.

2. Additionally, should NASA and Partner agree that any such marked Data first produced by NASA under this Agreement is based on and directly discloses the Partner's Background Data then, upon request, NASA will use reasonable efforts to protect such marked Data and, to the extent permitted by law, such marked Data may be disclosed and used (under suitable protective conditions) only for U.S. Government purposes.

**D. Protection of Information**

It is acknowledged by NASA and Partner that certain information to be provided by Partner to NASA or produced by NASA based on such information as a consequence of this Agreement is extremely sensitive, and that the release of such Proprietary Data, or Data that would be Proprietary Data if obtained from Partner, to third parties could cause harm to Partner and to the objectives of this Agreement. Access to the Proprietary Data is being provided voluntarily by Partner and would not be provided if either the Proprietary Data itself, or NASA analysis thereof, were subject to public disclosure. Accordingly, NASA will protect Partner's Proprietary Data in accordance with this Agreement. NASA will analyze Partner's Proprietary Data and produce its resulting analyses based thereon in accordance with this Agreement, including NASA's responsibilities in Article 3, or as otherwise mutually agreed by the Parties in writing. NASA will generate the resulting analyses on Partner's servers, keep no copies thereof and use the analyses solely to perform NASA's obligations under this Agreement, including to publish in accordance with Article 9(E) unclassified, non-Proprietary Data and analyses that are not airline-specific and that result from work performed under this Agreement. All Data first produced by NASA under this Agreement will be treated in accordance with Article 9(C).

NASA specifically agrees that, if it should receive any request, demand, subpoena, or claim, whether based on the Freedom of Information Act (5 USC 552a)(FOIA), or any legal process whatsoever for the release of such information, it will notify Partner as soon as reasonably practicable and will disclose such information only as required by applicable law.

Notwithstanding anything to the contrary herein, each Party shall use best efforts to ensure the absolute confidentiality and ultimate anonymity of individual crewmembers and all other employees of Partner. No Data provided to NASA under this Agreement will be used to initiate, facilitate or support any legal or administrative action upon any employee of Partner. To these ends, during performance, all Proprietary Data will remain on Partner's servers, the algorithms utilized will be run on Partner's servers, and the resulting analyses will be generated and remain on Partner's servers, and NASA will use the analyses solely to perform NASA's obligations under this Agreement, including to publish in accordance with Article 9(E) unclassified, non-Proprietary Data and analyses that are not airline-specific and that result from work performed under this Agreement. Further, NASA agrees to undertake no efforts to identify individual crewmembers or other employees of Partner.

NASA shall only access Partner's Proprietary Data with Partner-provided access credentials to a virtual private network connected to Partner's server, both of which will be designated by Partner in its sole discretion. NASA shall perform any obligations in connection with this Agreement only on Partner's designated server, and shall not mirror, reproduce, download or otherwise copy such Proprietary Data onto any NASA-owned or operated hardware. Further, NASA must notify Partner within twenty-four (24) hours of becoming aware of any actual or suspected loss, unauthorized disclosure, or unauthorized use of or access to any access credentials to Partner's designated virtual private network and/or server.

#### E. Publication of Results

The National Aeronautics and Space Act (51 U.S.C. § 20113(e)) requires NASA ARC to provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof. The Parties agree that NASA ARC may publish unclassified, non-Proprietary Data and analyses that are not airline-specific and that result from work performed under this Agreement. For non-joint, NASA-authored reports for publication or presentation at technical conferences, the Parties agree to the following publication review process: NASA ARC will share draft reports and presentations and advance copies of such reports with Partner. Partner will review and provide any comments on this shared information to NASA ARC within fifteen (15) days of receipt of such information by Partner. NASA ARC will use reasonable efforts to address concerns raised by Partner and received by NASA ARC within the 15-day window.

#### F. Data Disclosing an Invention

If the Parties exchange Data disclosing an invention for which patent protection is being considered, and the Disclosing Party identifies the Data as such when providing it to the Receiving Party, the Receiving Party shall withhold it from public disclosure for a reasonable time, not to exceed twelve (12) months unless otherwise agreed or the Data is restricted for a longer period herein.

#### G. Copyright

Data exchanged with a copyright notice and with no restrictive notice is presumed to be published. The following royalty-free licenses apply:

1. If indicated on the Data that it was produced outside of this Agreement, such Data may be reproduced, distributed, and used to prepare derivative works only for carrying out the Receiving Party's responsibilities under this Agreement.
2. Data without the indication of subarticle G.1 is presumed to be first produced under this Agreement. Except as otherwise provided in subarticle F of this Article 9, in Article 10, for protection of reported inventions or Article 9(D), such Data may be reproduced, distributed, and used to prepare derivative works for any purpose.

#### H. Data Subject to Export Control

Whether or not marked, technical data subject to the export laws and regulations of the United States provided to Partner under this Agreement must not be given to foreign persons or transmitted outside the United States without proper U.S. Government authorization.

I. Handling of Background, Third Party Proprietary, and Controlled Government Data

1. NASA or Partner (as Disclosing Party) may provide the other Party or its Related Entities (as Receiving Party):

- a. Proprietary Data developed at Disclosing Party's expense outside of this Agreement (referred to as "Background Data");
- b. Proprietary Data of third parties that Disclosing Party has agreed to protect or is required to protect under the Trade Secrets Act (18 U.S.C. § 1905) (referred to as "Third Party Proprietary Data"); and
- c. U.S. Government Data, including software and related Data, Disclosing Party intends to control (referred to as "Controlled Government Data").

2. All Background, Third Party Proprietary and Controlled Government Data provided by Disclosing Party to Receiving Party shall be marked by Disclosing Party with a restrictive notice and protected by Receiving Party in accordance with this Article 9.

3. Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data.

a. Background Data:

Pre-existing de-identified human performance Data.

b. Third Party Proprietary Data:

None.

c. Controlled Government Data:

None.

d. Notwithstanding H.4., NASA software and related Data that is listed below within this paragraph (3d) will be provided to Partner under a separate Software Usage Agreement (SUA). Partner shall use and protect the related Data in accordance with this Article. Unless the SUA authorizes retention, or Partner enters into a license under 37 C.F.R. Part 404, the related Data shall be disposed of as NASA directs:

None.

4. For Data with a restrictive notice and Data in this Agreement, Receiving Party shall:

- a. Use, disclose, or reproduce such Data only as necessary under this Agreement;
- b. Safeguard such Data from unauthorized use and disclosure;
  
- c. Allow access to such Data only to its employees and any Related Entity requiring access under this Agreement;
  
- d. Except as otherwise indicated in subarticle I.4.c. of this Article 9, preclude disclosure outside Receiving Party's organization;
  
- e. Notify its employees with access to such Data about their obligations under this Article 9 and ensure their compliance, and notify any Related Entity with access to the Data about their obligations under this Article 9;
  
- f. Dispose of such Data as Disclosing Party directs; and
  
- g. Undertake no efforts to re-identify de-identified human performance Data.

J. Oral and visual information

If Partner discloses Proprietary Data orally or visually, NASA will have no duty to restrict, or liability for disclosure or use, unless Partner:

- 1. Orally informs NASA before initial disclosure that the Data is Proprietary Data, and
- 2. Reduces the Data to tangible form with a restrictive notice and gives it to NASA within ten (10) business days after disclosure.

ARTICLE 10. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

- A. "Related Entity" as used in this Invention and Patent Rights Article means a contractor, subcontractor, grantee, or other entity having a legal relationship with NASA or Partner assigned, tasked, or contracted with to perform activities under this Agreement.
  
- B. The invention and patent rights herein apply to employees and Related Entities of Partner. Partner shall ensure that its employees and Related Entity employees know about and are bound by the obligations under this Article 10.
  
- C. NASA has determined that 51 U.S.C. § 20135(b) does not apply to this Agreement. Therefore, title to inventions made (conceived or first actually reduced to practice) under this Agreement remain with the respective inventing party(ies). No invention or patent rights are exchanged or granted under this Agreement. NASA and Partner will use reasonable efforts to report inventions made jointly by their employees (including employees of their Related Entities). The Parties will consult and agree on the responsibilities and actions to establish and maintain patent protection for joint invention,

and on the terms and conditions of any license or other rights exchanged or granted between them.

#### ARTICLE 11. USE OF NAME AND EMBLEMS

##### A. NASA Name and Initials

Partner shall not use "National Aeronautics and Space Administration" or "NASA" in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. Except for releases under the "Release of General Information to the Public and Media" Article, Partner must submit any proposed public use of the NASA name or initials (including press releases and all promotional and advertising use) to the NASA Associate Administrator for the Office of Communications or designee ("NASA Communications") for review and approval. Approval by NASA Office of Communications shall be based on applicable law and policy governing the use of the NASA name and initials.

##### B. NASA Emblems

Use of NASA emblems (i.e., NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. Partner must submit any proposed use of the emblems to NASA Communications for review and approval.

C. NASA will not use any of Partner's logos or trademarks. Any use of Partner's name shall be limited to statements of fact.

#### ARTICLE 12. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or Partner may, consistent with Federal law and this Agreement, release general information regarding its own participation in this Agreement as desired.

Pursuant to Section 841(d) of the NASA Transition Authorization Act of 2017, Public Law 115-10 (the "NTAA"), NASA is obligated to publicly disclose copies of all agreements conducted pursuant to NASA's 51 U.S.C. §20113(e) authority in a searchable format on the NASA website within 60 days after the agreement is signed by the Parties. The Parties acknowledge that a copy of this Agreement will be disclosed, without redactions, in accordance with the NTAA.

#### ARTICLE 13. DISCLAIMER OF WARRANTY

Goods, services, facilities, or equipment provided by either Party under this Agreement are provided "as is." Neither Party makes an express or implied warranty as to the condition of any such goods, services, facilities, or equipment, or as to the condition of any research or information generated under this Agreement, or as to any products made

or developed under or as a result of this Agreement including as a result of the use of information generated hereunder, or as to the merchantability or fitness for a particular purpose of such research, information, or resulting product, or that the goods, services, facilities or equipment provided will accomplish the intended results or are safe for any purpose including the intended purpose, or that any of the above will not interfere with privately-owned rights of others. Neither Party nor its Related Entities shall be liable for special, consequential or incidental damages attributed to such equipment, facilities, technical information, or services provided under this Agreement or such research, information, or resulting products made or developed under or as a result of this Agreement.

#### ARTICLE 14. DISCLAIMER OF ENDORSEMENT

NASA does not endorse or sponsor any commercial product, service, or activity. NASA's participation in this Agreement or provision of goods, services, facilities or equipment under this Agreement does not constitute endorsement by NASA. Partner agrees that nothing in this Agreement will be construed to imply that NASA authorizes, supports, endorses, or sponsors any product or service of Partner resulting from activities conducted under this Agreement, regardless of the fact that such product or service may employ NASA-developed technology.

#### ARTICLE 15. COMPLIANCE WITH LAWS AND REGULATIONS

A. The Parties shall comply with all applicable laws and regulations including, but not limited to, safety; security; export control; environmental; and suspension and debarment laws and regulations. Access by Partner to NASA facilities or property, or to a NASA Information Technology (IT) system or application, is contingent upon compliance with NASA security and safety policies and guidelines including, but not limited to, standards on badging, credentials, and facility and IT system/application access.

B. With respect to any export control requirements:

1. The Parties will comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120 through 130, and the Export Administration Regulations (EAR), 15 C.F.R. Parts 730 through 799, in performing work under this Agreement. In the absence of available license exemptions or exceptions, Partner shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data and software, or for the provision of technical assistance.

2. Partner shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of work under this Agreement, including instances where the work is to be performed on-site at NASA and where the foreign person will have access to export-controlled technical data or software.

3. Partner will be responsible for all regulatory record-keeping requirements associated with the use of licenses and license exemptions or exceptions.

4. Partner will be responsible for ensuring that the provisions of this Article 15 apply to its Related Entities.

C. With respect to suspension and debarment requirements:

1. The Partner hereby certifies, to the best of its knowledge and belief, that it has complied, and shall comply, with 2 C.F.R. Part 180, Subpart C, as supplemented by 2 C.F.R. Part 1880, Subpart C.

2. The Partner shall include language and requirements equivalent to those set forth in subarticle C.1. of this Article 15 in any lower-tier covered transaction entered into under this Agreement.

#### ARTICLE 16. TERM OF AGREEMENT

This Agreement becomes effective upon the date of the last signature below ("Effective Date") and, unless earlier terminated in accordance with the terms hereof or applicable law, shall remain in effect until the completion of all obligations of both Parties hereto, or five years from the Effective Date, whichever comes first.

#### ARTICLE 17. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Agreement, including any pilot fatigue study, by providing thirty (30) calendar days written notice to the other Party.

#### ARTICLE 18. CONTINUING OBLIGATIONS

Notwithstanding anything herein to the contrary, in addition to any articles of this Agreement that may survive pursuant to the terms therein, Articles 8, 9, 10, 11, 12, 13, 15, 16 and this Article 18, as well as any other articles hereof that expressly or impliedly survive expiration or termination, shall survive the expiration or termination of this Agreement.

#### ARTICLE 19. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Agreement. Such Points of Contact may be changed upon written notice to the other Party.

#### Management Points of Contact

NASA Ames Research Center  
Matthew Holtrust  
Agreement Manager  
Mail Stop: 223-3, Room 100  
Moffett Field, CA 94035  
Phone: (650) 604-4069  
matthew.j.holtrust@nasa.gov

American Airlines, Inc.  
Heather Provost  
Senior Manager, Fatigue Risk  
Management  
1 Skyview Dr  
MD 8B101  
Fort Worth, TX 76155-2123  
Phone: (817) 209-7720  
heather.provost@aa.com

#### Technical Points of Contact

NASA Ames Research Center  
Erin E. Flynn-Evans PhD MPH  
Project Lead, Fatigue Countermeasures Group  
Mail Stop: 262-4  
Moffett Field, CA 94035  
Phone: (650) 279-3459  
erin.e.flynn-evans@nasa.gov

American Airlines, Inc.  
Heather Provost  
Senior Manager, Fatigue Risk  
Management  
1 Skyview Dr  
MD 8B101  
Fort Worth, TX 76155-2123  
Phone: (817) 209-7720  
heather.provost@aa.com

#### ARTICLE 20. DISPUTE RESOLUTION

Except as otherwise provided in Article 6 and Article 10 (for those activities governed by 37 C.F.R. Part 404), and those situations where a pre-existing statutory or regulatory system exists (e.g., under the Freedom of Information Act, 5 U.S.C. § 552), all disputes concerning questions of fact or law arising under this Agreement shall be referred by the claimant in writing to the appropriate person identified in this Agreement as the "Points of Contact." The persons identified as the "Points of Contact" for NASA and the Partner will consult and attempt to resolve all issues arising from the implementation of this Agreement. If they are unable to come to agreement on any issue, the dispute will be referred to the signatories to this Agreement, or their designees, for joint resolution. If the Parties remain unable to resolve the dispute, then the NASA signatory or that person's designee, as applicable, will issue a written decision that will be the final agency decision for the purpose of judicial review. Nothing in this Article 20 limits or prevents either Party from pursuing any other right or remedy available by law upon the issuance of the final agency decision.

#### ARTICLE 21. MODIFICATIONS

This Agreement shall not in any manner be supplemented, amended or modified except by a written instrument executed on behalf of the Parties by their respective duly authorized representatives.

## ARTICLE 22. ASSIGNMENT

Neither this Agreement nor any interest arising under it will be assigned by the Partner or NASA without the express written consent of the officials executing, or successors, or higher-level officials possessing original or delegated authority to execute this Agreement. Provided, however, that Partner may assign this Agreement and the rights and obligations created hereunder to a wholly-owned subsidiary of American Airlines Group Inc. without the consent of NASA ARC.

## ARTICLE 23. APPLICABLE LAW

U.S. Federal law governs this Agreement for all purposes, including, but not limited to, determining the validity of the Agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

## ARTICLE 24. INDEPENDENT RELATIONSHIP

This Agreement is not intended to constitute, create, give effect to or otherwise recognize a joint venture, partnership, or formal business organization, or agency agreement of any kind, and the rights and obligations of the Parties shall be only those expressly set forth herein.

## ARTICLE 25. COUNTERPARTS

This Agreement may be executed in one or more counterparts, including electronically transmitted counterparts, each of which shall be deemed an original, but all such counterparts together shall constitute but one and the same agreement.

## ARTICLE 26. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the Parties with respect to its subject matter and supersedes all prior and contemporaneous agreements, understandings and negotiations, both written and oral, between the Parties with respect to the subject matter.

## ARTICLE 27. SAVINGS CLAUSE

If any provision of this Agreement is declared unlawful or unenforceable as a result of final administrative, legislative, or judicial action, this Agreement shall be deemed to be amended to conform to the requirements of such action and all other provisions hereof shall remain in full force and effect.

ARTICLE 28. SIGNATORY AUTHORITY

The signatories to this Agreement represent and warrant that they have authority to execute this Agreement. By signing below, the undersigned agrees to the above terms and conditions.

**[Signature Page Follows]**

IN WITNESS WHEREOF, the Parties have entered into this Agreement effective as of the Effective Date.

**NATIONAL AERONAUTICS AND  
SPACE ADMINISTRATION  
AMES RESEARCH CENTER**

**AMERICAN AIRLINES, INC.**

BY: \_\_\_\_\_  
Huy K. Tran  
Director of Aeronautics

BY: Bobbi Jo Wells  
Bobbi Wells Vice President, Safety,  
Environmental, and Regulatory  
Compliance

DATE: \_\_\_\_\_

DATE: 3 Dec 21